



A Guide to the
**PROJECT MANAGEMENT
BODY OF KNOWLEDGE
(PMBOK® GUIDE)**

Fifth Edition

PMBOK 5

Chapters

PMBOK 5

- 1. Introduction – What is Project Management**
- 2. Organizational Influences and Project Life Cycle**
- 3. Project Management Processes**

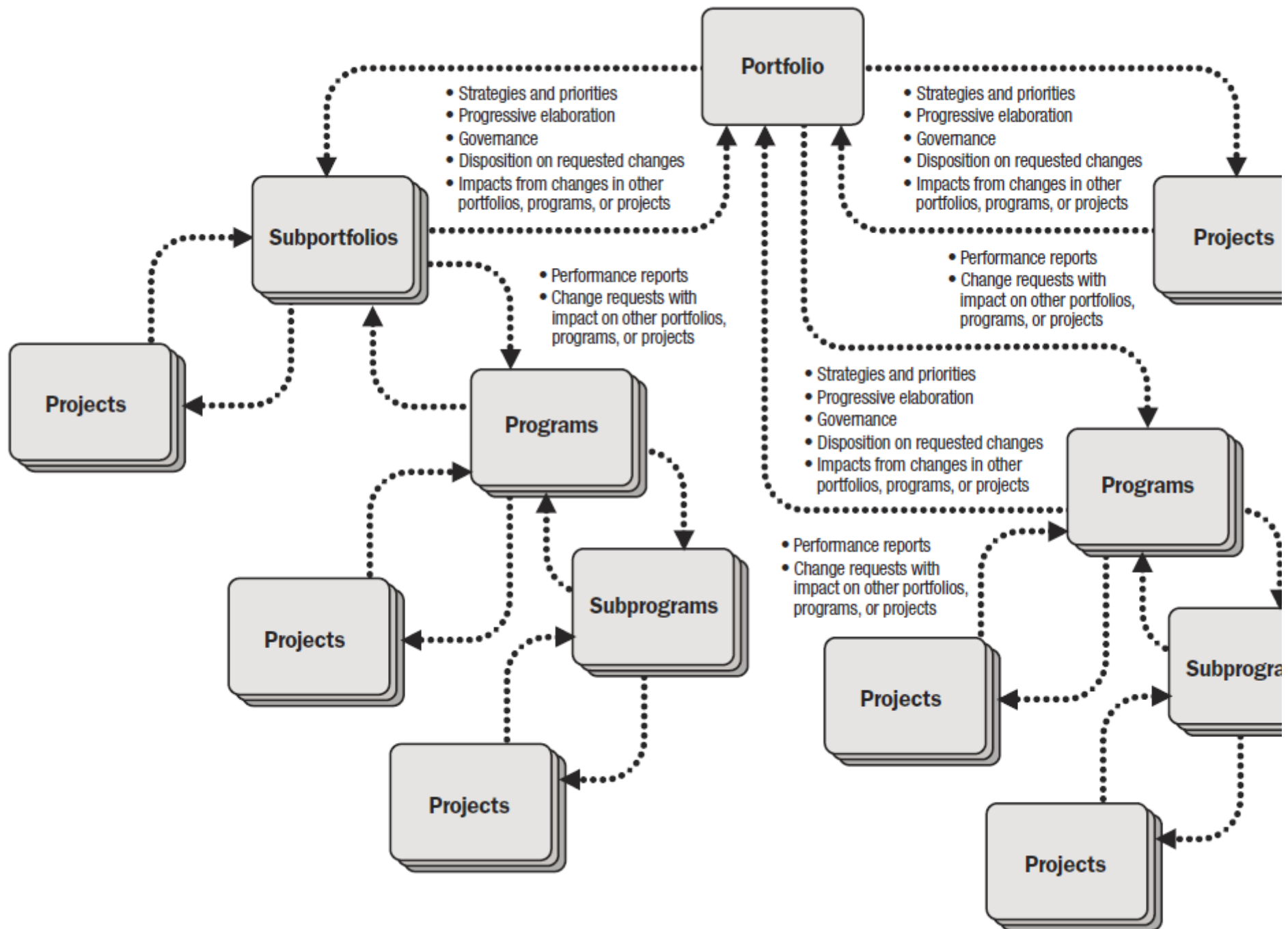
Knowledge Areas

- 4. Project Integration Management**
- 5. Project Scope Management**
- 6. Project Time Management**
- 7. Project Cost Management**
- 8. Project Quality Management**
- 9. Project Human Resource Management**
- 10. Project Communications Management**
- 11. Project Risk Management**
- 12. Project Procurement Management**
- 13. Project Stakeholder Management**

PMBOK

1.2 What is a Project?

A project is a temporary endeavor undertaken to create a unique product, service, or result. The temporary nature of projects indicates that a project has a definite beginning and end. The end is reached when the project's objectives have been achieved or when the project is terminated because its objectives will not or cannot be met, or when the need for the project no longer exists. A project may also be terminated if the client (customer, sponsor, or champion) wishes to terminate the project. Temporary does not necessarily mean the duration of the project is short. It refers to the project's engagement and its longevity. Temporary does not typically apply to the product, service, or result created by the project; most projects are undertaken to create a lasting outcome. For example, a project to build a national monument will create a result expected to last for centuries. Projects can also have social, economic, and environmental impacts that far outlive the projects themselves.



PMBOK Chapter 2

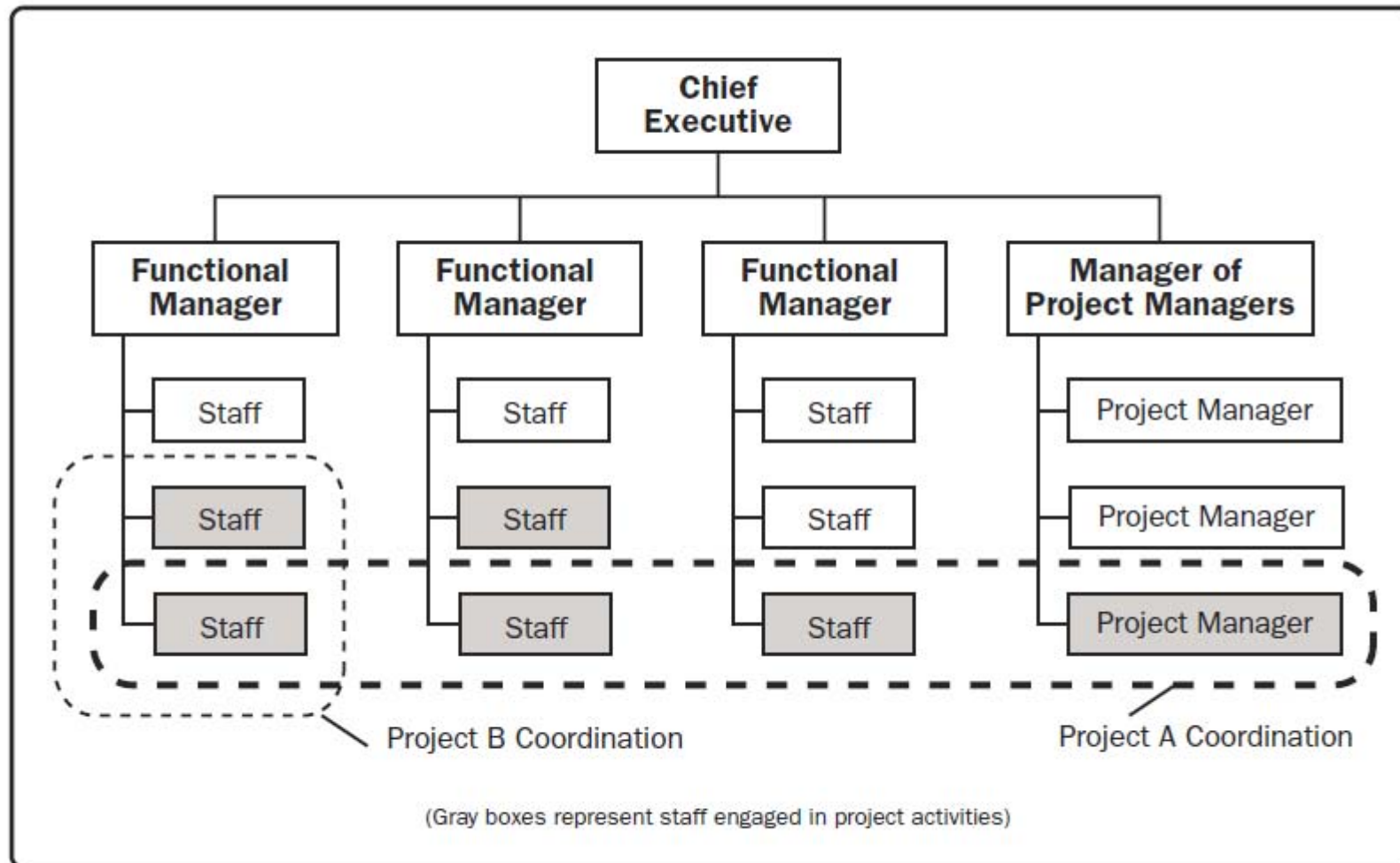


Figure 2-6. Composite Organization

PMBOK Chapter 2

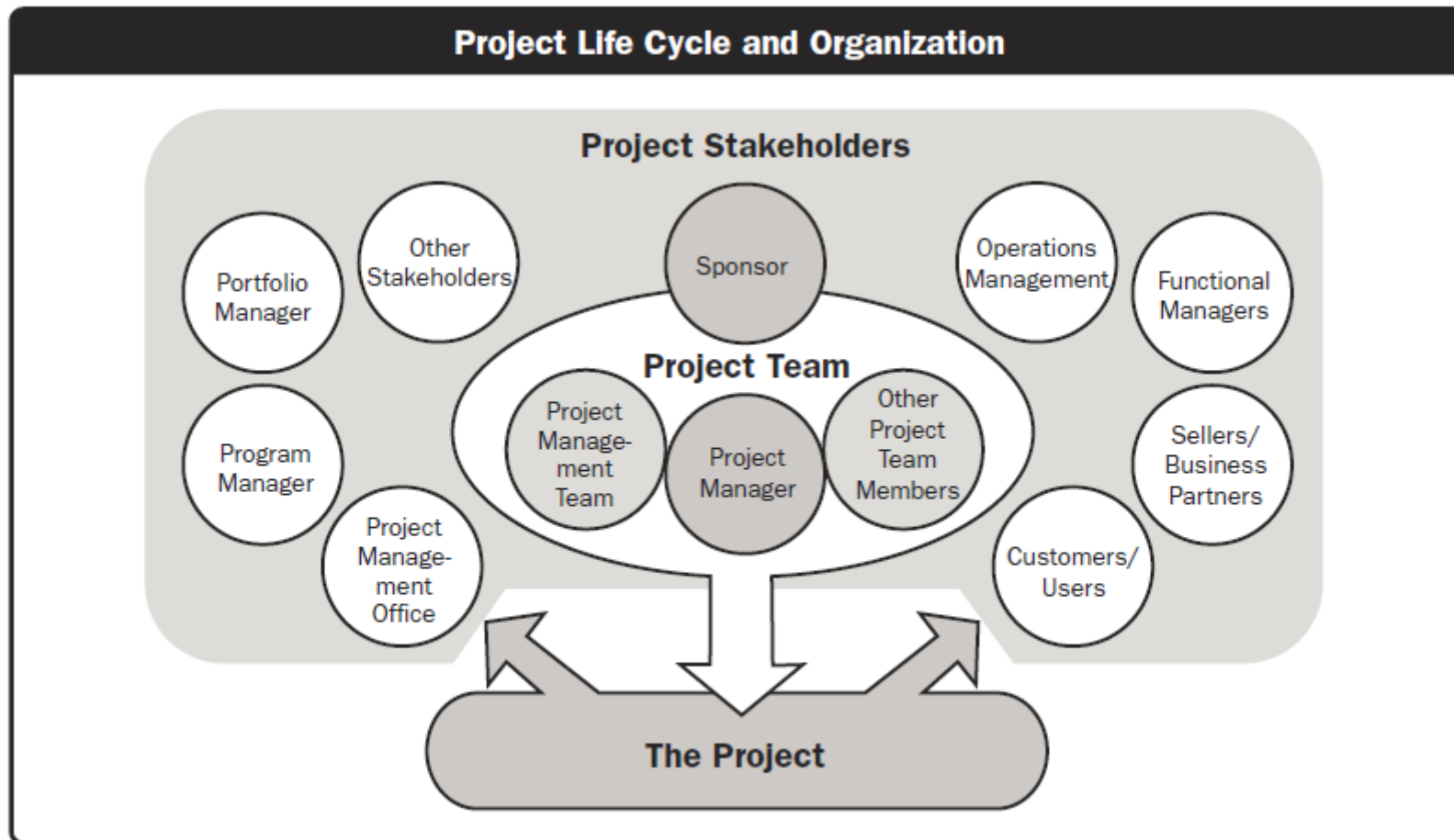


Figure 2-7. The Relationship Between Stakeholders and the Project

PMBOK Chapter 2

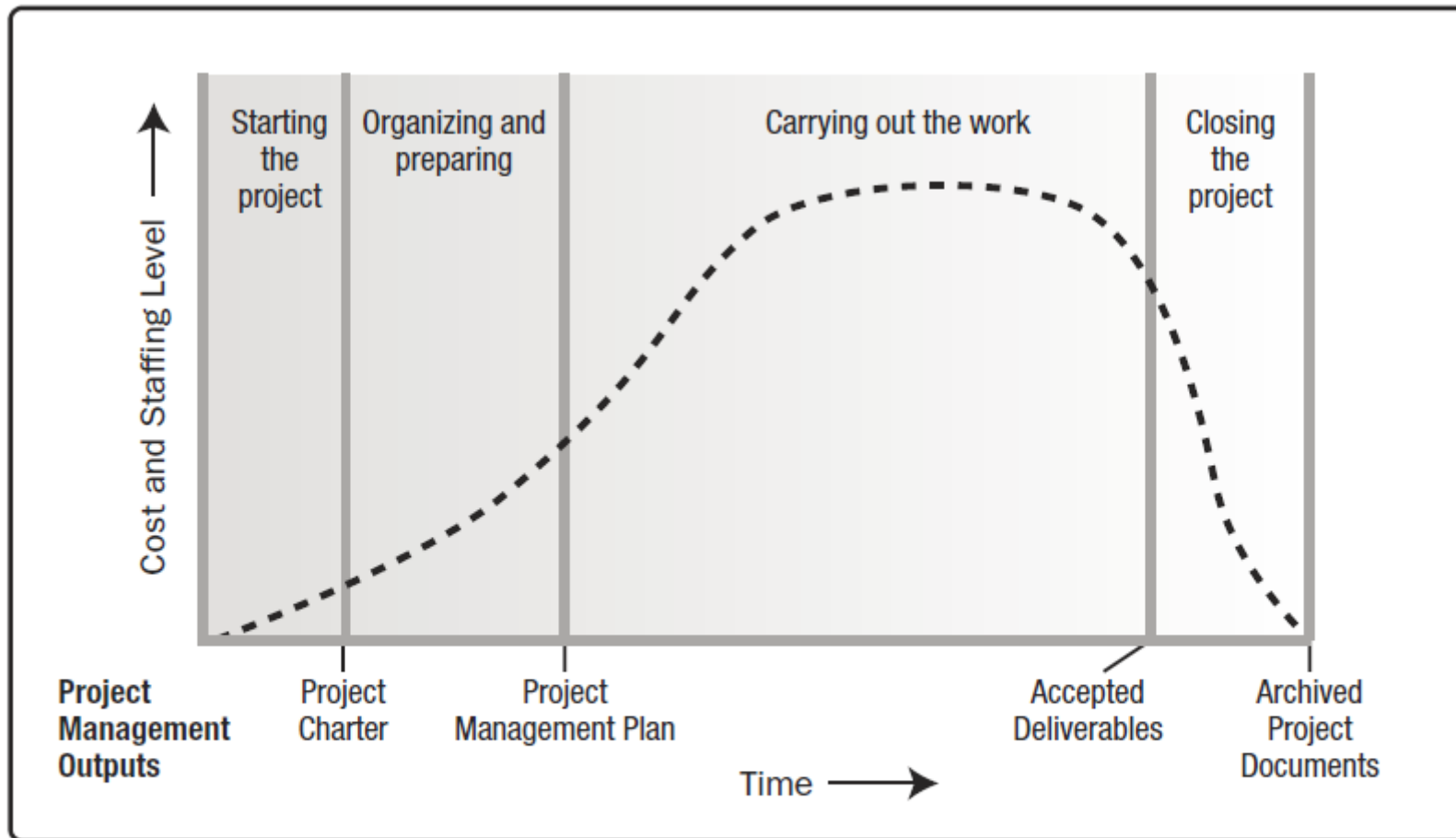


Figure 2-8. Typical Cost and Staffing Levels Across a Generic Project Life Cycle Structure

PMBOK 5 Process Groups

The Guide recognizes 47 processes that fall into five basic process groups and ten knowledge areas

The five process groups are:

- 1. Initiating**
- 2. Planning**
- 3. Executing**
- 4. Monitoring and Controlling**
- 5. Closing**

PMBOK 5 Knowledge Areas

1. Project Integration Management
2. Project Scope Management
3. Project Time Management
4. Project Cost Management
5. Project Quality Management
6. Project Human Resources Management
7. Project Communications Management
8. Project Risk Management
9. Project Procurement Management
10. Project Stakeholder Management

PMBOK 5 Knowledge Areas

4. Project Integration Management

Project Integration Management includes the processes and activities needed to identify, define, combine, unify, and coordinate the various processes and project management activities within the Project Management Process Groups.

PMBOK 5 Knowledge Areas

4. Project Integration Management

1. Develop Project Charter
2. Develop Project Management Plan
3. Direct and Manage Project Work
4. Monitor and Control Project Work
5. Perform Integrated Change Control
6. Close Project or Phase

PMBOK 5 Knowledge Areas

5. Project Scope Management

Project Scope Management includes the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully.

PMBOK 5 Knowledge Areas

5. Project Scope Management

1. Plan Scope Management
2. Collect Requirements
3. Define Scope
4. Create WBS
5. Validate Scope
6. Control Scope

PMBOK 5 Knowledge Areas

6. Project Time Management

Project Time Management includes the processes required to manage the timely completion of the project.

PMBOK 5 Knowledge Areas

6. Project Time Management

1. Plan Schedule Management
2. Define Activities
3. Sequence Activity
4. Develop Schedule
5. Estimate Activity Resources
6. Estimate Activity Duration
7. Control Schedule

PMBOK 5 Knowledge Areas

7. Project Cost Management

Project Cost Management includes the processes involved in planning, estimating, budgeting, financing, funding, managing, and controlling costs so that the project can be completed within the approved budget.

PMBOK 5 Knowledge Areas

7. Project Cost Management

1. Plan Cost Management
2. Estimate Costs
3. Determine Budget
4. Control Costs

PMBOK 5 Knowledge Areas

8. Project Quality Management

Project Quality Management includes the processes and activities of the performing organization that determine quality policies, objectives, and responsibilities so that the project will satisfy the needs for which it was undertaken.

PMBOK 5 Knowledge Areas

8. Project Quality Management

1. Plan Quality Management
2. Perform Quality Assurance
3. Control Quality

PMBOK 5 Knowledge Areas

9. Project Human Resources Management

Project Human Resource Management includes the processes that organize, manage, and lead the project team.

PMBOK 5 Knowledge Areas

9. Project Human Resources Management

1. Plan Human Resource Management
2. Acquire Project Team
3. Develop Project Team
4. Manage Project Team

PMBOK 5 Knowledge Areas

10. Project Communications Management

Project Communications Management includes the processes that are required to ensure timely and appropriate planning, collection, creation, distribution, storage, retrieval, management, control, monitoring, and the ultimate disposition of project information.

PMBOK 5 Knowledge Areas

10. Project Communications Management

1. Plan Communications Management
2. Manage Communications
3. Control Communications

PMBOK 5 Knowledge Areas

11. Project Risk Management

Project Risk Management includes the processes of conducting risk management planning, identification, analysis, response planning, and controlling risk on a project.

PMBOK 5 Knowledge Areas

11. Project Risk Management

- 1. Plan Risk Management**
- 2. Identify Risks**
- 3. Perform Qualitative Risk Analysis**
- 4. Perform Quantitative Risk Analysis**
- 5. Plan Risk Responses**
- 6. Control Risks**

PMBOK 5 Knowledge Areas

12. Project Procurement Management

Project Procurement Management includes the processes necessary to purchase or acquire products, services, or results needed from outside the project team.

PMBOK 5 Knowledge Areas

12. Project Procurement Management

1. Plan Procurement Management
2. Conduct Procurements
3. Control Procurements
4. Close Procurements

PMBOK 5 Knowledge Areas

13. Project Stakeholder Management

Project Stakeholder Management includes the processes required to identify all people or organizations impacted by the project, analyzing stakeholder expectations and impact on the project, and developing appropriate management strategies for effectively engaging stakeholders in project decisions and execution.

PMBOK 5 Knowledge Areas

13. Project Stakeholder Management

1. Identify Stakeholders
2. Plan Stakeholder Management
3. Manage Stakeholder Engagement
4. Control Stakeholder Engagement

Project Management Process Groups

- **Initiating Process Group.** Those processes performed to define a new project or a new phase of an existing project by obtaining authorization to start the project or phase.
- **Planning Process Group.** Those processes required to establish the scope of the project, refine the objectives, and define the course of action required to attain the objectives that the project was undertaken to achieve.
- **Executing Process Group.** Those processes performed to complete the work defined in the project management plan to satisfy the project specifications.
- **Monitoring and Controlling Process Group.** Those processes required to track, review, and regulate the progress and performance of the project; identify any areas in which changes to the plan are required; and initiate the corresponding changes.
- **Closing Process Group.** Those processes performed to finalize all activities across all Process Groups to formally close the project or phase.

Table 3-1. Project Management Process Group and Knowledge Area Mapping

Knowledge Areas	Project Management Process Groups				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring and Controlling Process Group	Closing Process Group
4. Project Integration Management	4.1 Develop Project Charter	4.2 Develop Project Management Plan	4.3 Direct and Manage Project Work	4.4 Monitor and Control Project Work 4.5 Perform Integrated Change Control	4.6 Close Project or Phase
5. Project Scope Management		5.1 Plan Scope Management 5.2 Collect Requirements 5.3 Define Scope 5.4 Create WBS		5.5 Validate Scope 5.6 Control Scope	
6. Project Time Management		6.1 Plan Schedule Management 6.2 Define Activities 6.3 Sequence Activities 6.4 Estimate Activity Resources 6.5 Estimate Activity Durations 6.6 Develop Schedule		6.7 Control Schedule	
7. Project Cost Management		7.1 Plan Cost Management 7.2 Estimate Costs 7.3 Determine Budget		7.4 Control Costs	

Knowledge Areas	Project Management Process Groups				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring and Controlling Process Group	Closing Process Group
8. Project Quality Management		8.1 Plan Quality Management	8.2 Perform Quality Assurance	8.3 Control Quality	
9. Project Human Resource Management		9.1 Plan Human Resource Management	9.2 Acquire Project Team 9.3 Develop Project Team 9.4 Manage Project Team		
10. Project Communications Management		10.1 Plan Communications Management	10.2 Manage Communications	10.3 Control Communications	
11. Project Risk Management		11.1 Plan Risk Management 11.2 Identify Risks 11.3 Perform Qualitative Risk Analysis 11.4 Perform Quantitative Risk Analysis 11.5 Plan Risk Responses		11.6 Control Risks	
12. Project Procurement Management		12.1 Plan Procurement Management	12.2 Conduct Procurements	12.3 Control Procurements	12.4 Close Procurements
13. Project Stakeholder Management	13.1 Identify Stakeholders	13.2 Plan Stakeholder Management	13.3 Manage Stakeholder Engagement	13.4 Control Stakeholder Engagement	

Project Integration Management Overview

4.1 Develop Project Charter

- .1 Inputs
 - .1 Project statement of work
 - .2 Business case
 - .3 Agreements
 - .4 Enterprise environmental factors
 - .5 Organizational process assets
- .2 Tools & Techniques
 - .1 Expert judgment
 - .2 Facilitation techniques
- .3 Outputs
 - .1 Project charter

4.2 Develop Project Management Plan

- .1 Inputs
 - .1 Project charter
 - .2 Outputs from other processes
 - .3 Enterprise environmental factors
 - .4 Organizational process assets
- .2 Tools & Techniques
 - .1 Expert judgment
 - .2 Facilitation techniques
- .3 Outputs
 - .1 Project management plan

4.3 Direct and Manage Project Work

- .1 Inputs
 - .1 Project management plan
 - .2 Approved change requests
 - .3 Enterprise environmental factors
 - .4 Organizational process assets
- .2 Tools & Techniques
 - .1 Expert judgment
 - .2 Project management information system
 - .3 Meetings
- .3 Outputs
 - .1 Deliverables
 - .2 Work performance data
 - .3 Change requests
 - .4 Project management plan updates
 - .5 Project documents updates

Project Integration Management Overview

4.4 Monitor and Control Project Work

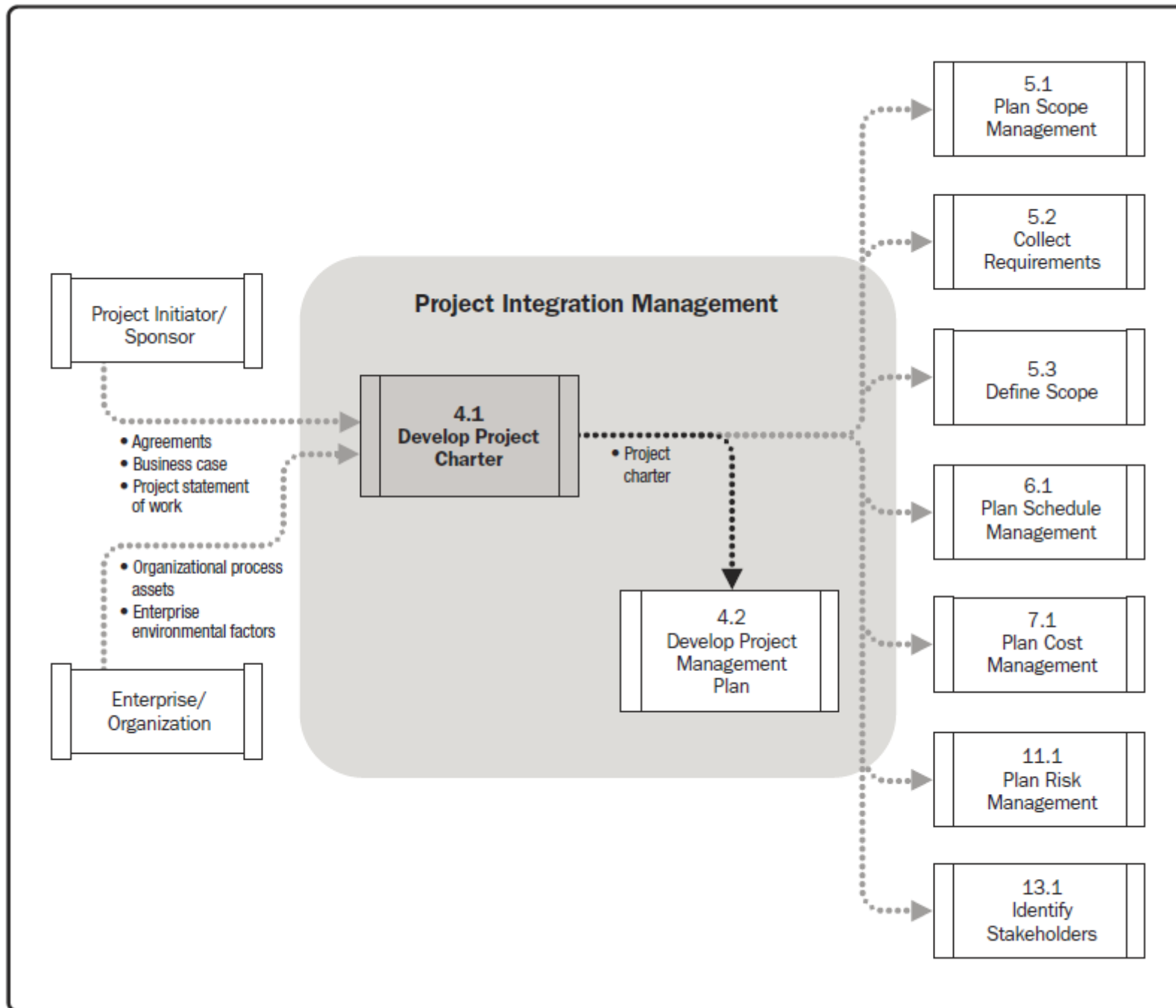
- .1 Inputs
 - .1 Project management plan
 - .2 Schedule forecasts
 - .3 Cost forecasts
 - .4 Validated changes
 - .5 Work performance information
 - .6 Enterprise environmental factors
 - .7 Organizational process assets
- .2 Tools & Techniques
 - .1 Expert judgment
 - .2 Analytical techniques
 - .3 Project management information system
 - .4 Meetings
- .3 Outputs
 - .1 Change requests
 - .2 Work performance reports
 - .3 Project management plan updates
 - .4 Project documents updates

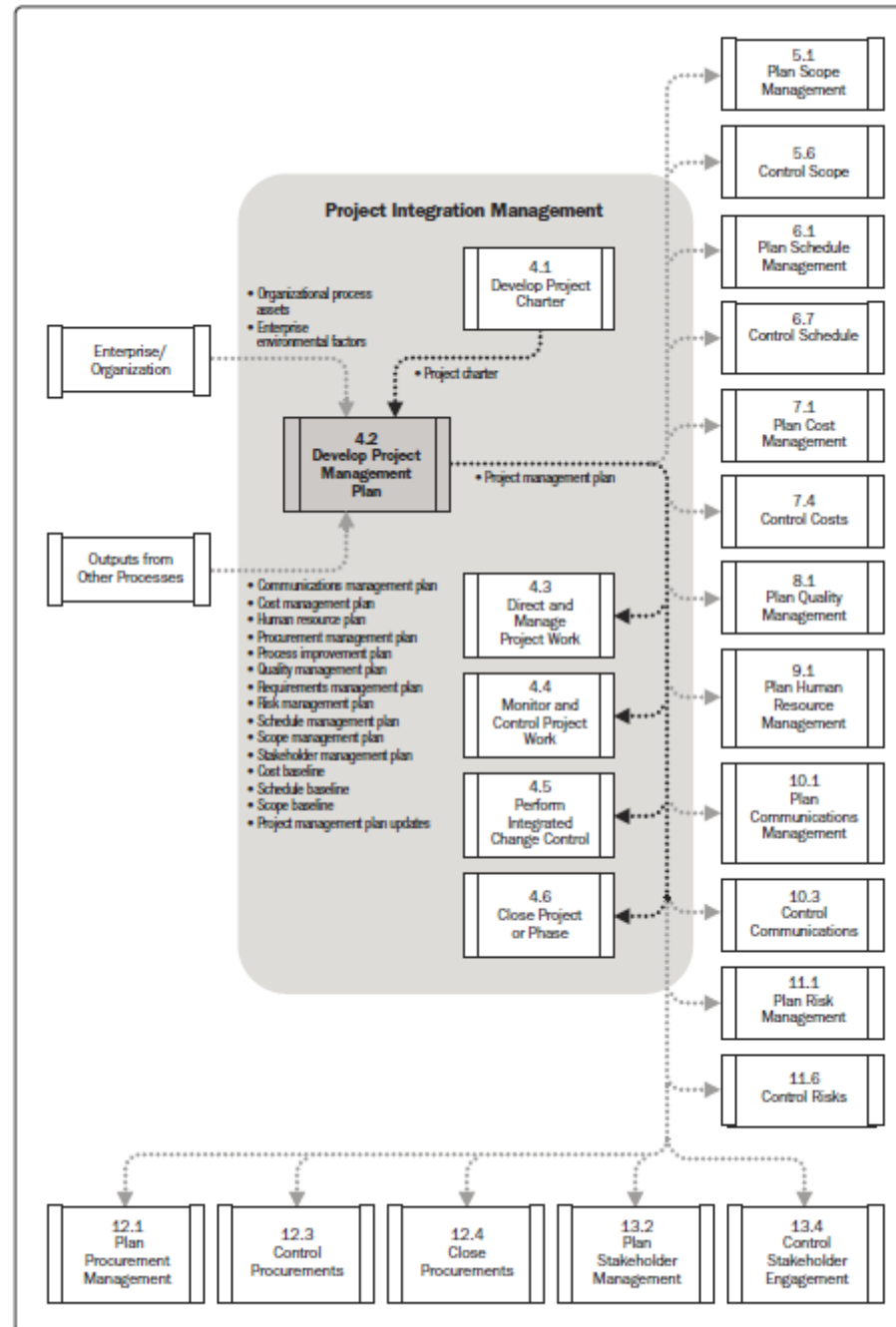
4.5 Perform Integrated Change Control

- .1 Inputs
 - .1 Project management plan
 - .2 Work performance reports
 - .3 Change requests
 - .4 Enterprise environmental factors
 - .5 Organizational process assets
- .2 Tools & Techniques
 - .1 Expert judgment
 - .2 Meetings
 - .3 Change control tools
- .3 Outputs
 - .1 Approved change requests
 - .2 Change log
 - .3 Project management plan updates
 - .4 Project documents updates

4.6 Close Project or Phase

- .1 Inputs
 - .1 Project management plan
 - .2 Accepted deliverables
 - .3 Organizational process assets
- .2 Tools & Techniques
 - .1 Expert judgment
 - .2 Analytical techniques
 - .3 Meetings
- .3 Outputs
 - .1 Final product, service, or result transition
 - .2 Organizational process assets updates





Project Scope Management

5.1 Plan Scope Management—The process of creating a scope management plan that documents how the project scope will be defined, validated, and controlled.

5.2 Collect Requirements—The process of determining, documenting, and managing stakeholder needs and requirements to meet project objectives.

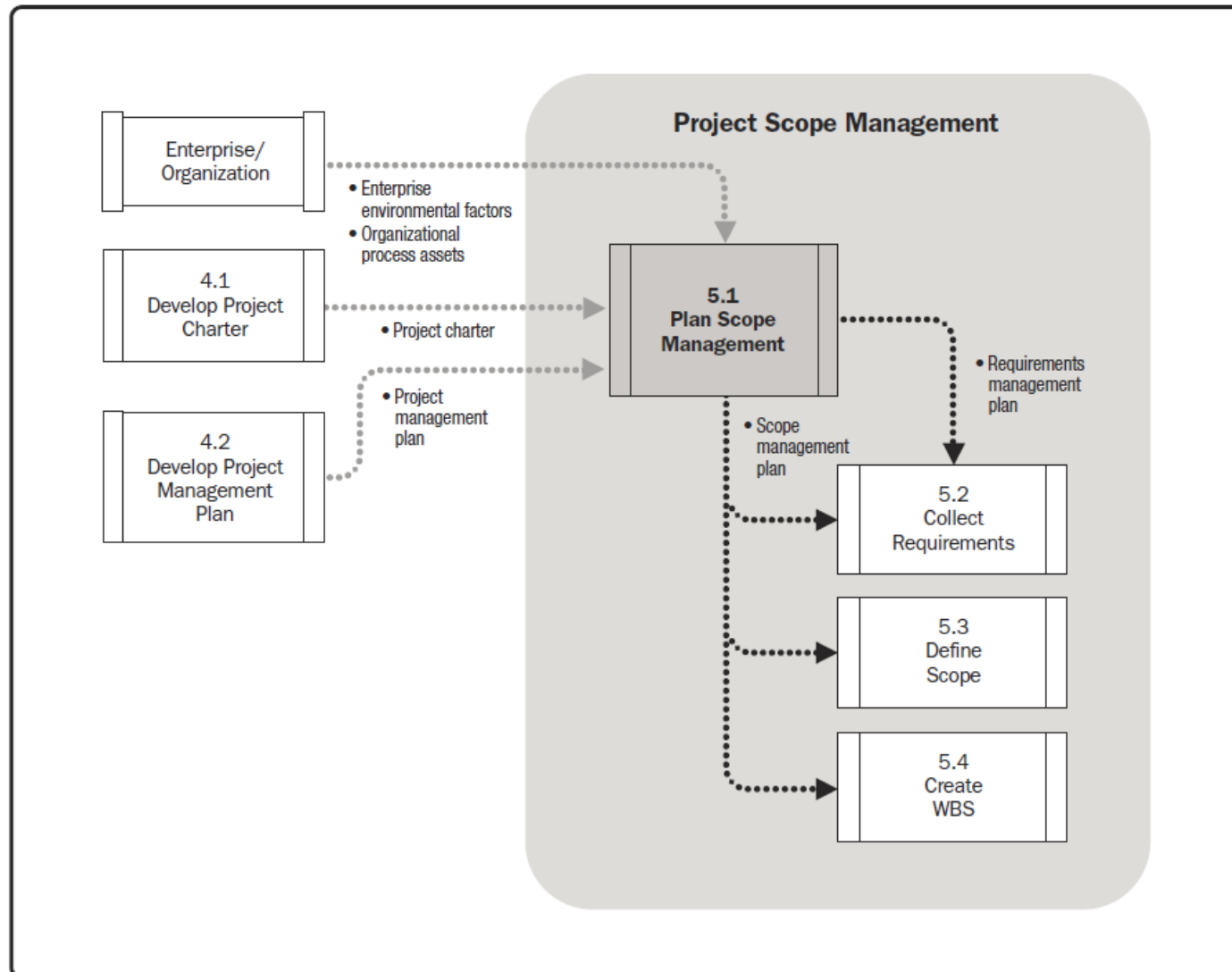
5.3 Define Scope—The process of developing a detailed description of the project and product.

5.4 Create WBS—The process of subdividing project deliverables and project work into smaller, more manageable components.

5.5 Validate Scope—The process of formalizing acceptance of the completed project deliverables.

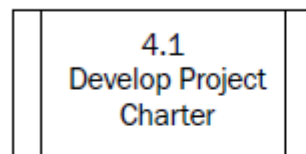
5.6 Control Scope—The process of monitoring the status of the project and product scope and controlling changes to the scope baseline.

Project Scope Management

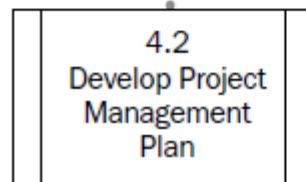


Project Time Management

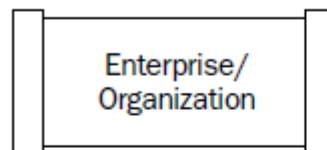
- 6.1 Plan Schedule Management**—The process of establishing the policies, procedures, and documentation for planning, developing, managing, executing, and controlling the project schedule.
- 6.2 Define Activities**—The process of identifying and documenting the specific actions to be performed to produce the project deliverables.
- 6.3 Sequence Activities**—The process of identifying and documenting relationships among the project activities.
- 6.4 Estimate Activity Resources**—The process of estimating the type and quantities of material, human resources, equipment, or supplies required to perform each activity.
- 6.5 Estimate Activity Durations**—The process of estimating the number of work periods needed to complete individual activities with estimated resources.
- 6.6 Develop Schedule**—The process of analyzing activity sequences, durations, resource requirements, and schedule constraints to create the project schedule model.
- 6.7 Control Schedule**—The process of monitoring the status of project activities to update project progress and manage changes to the schedule baseline to achieve the plan.



• Project charter



• Project
management
plan

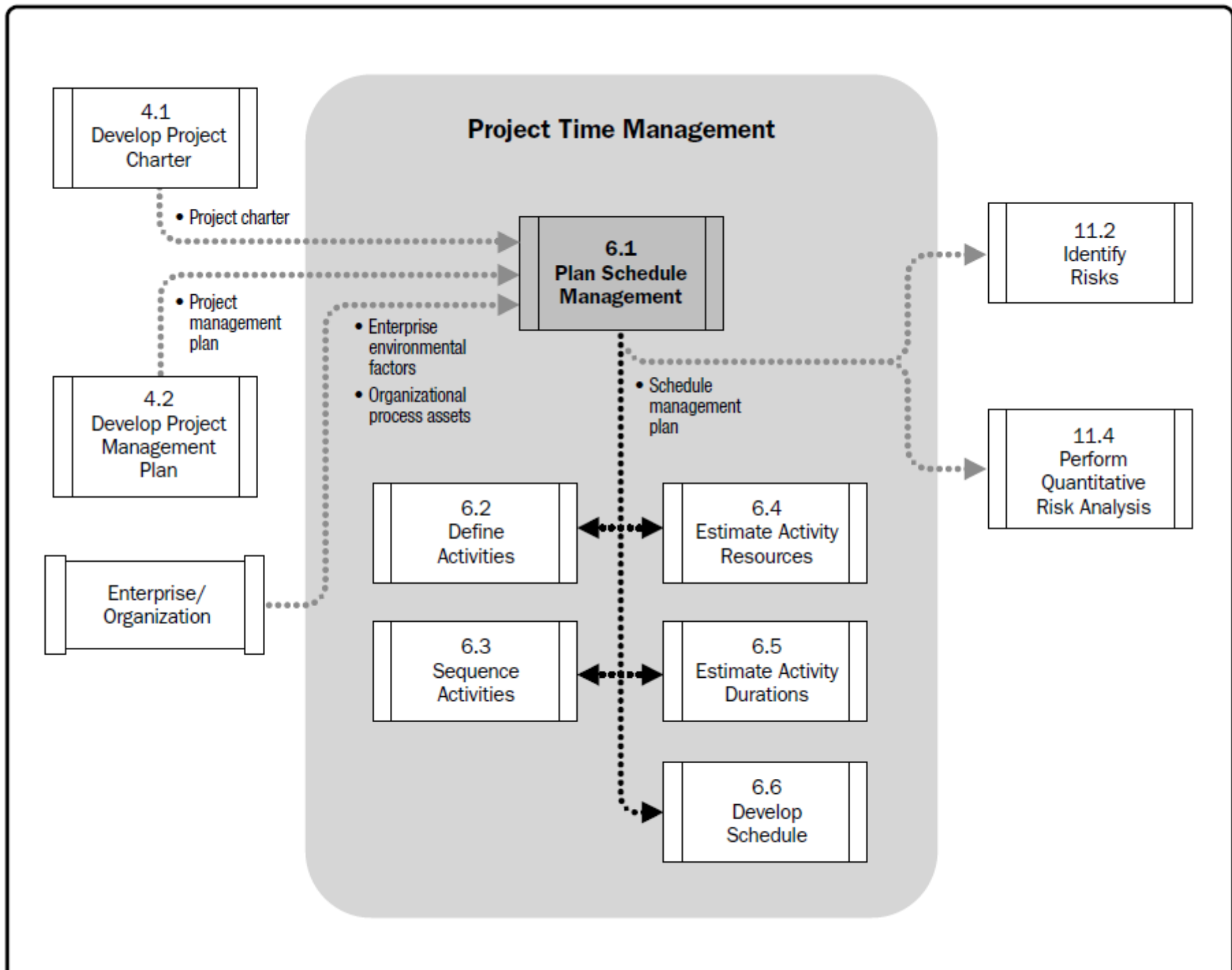
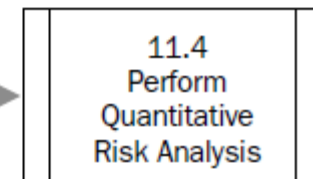
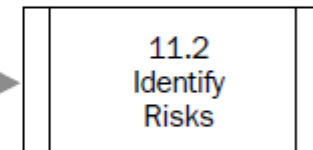
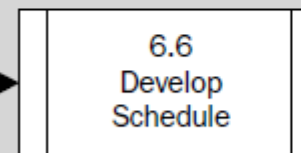
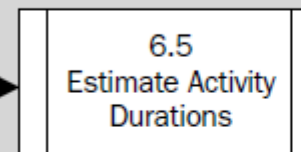
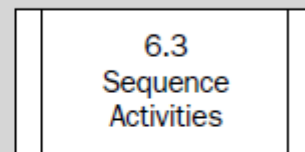
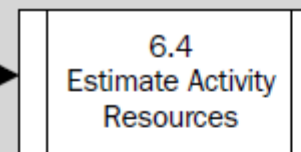
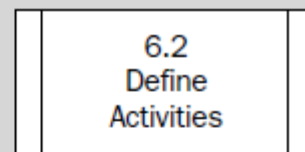


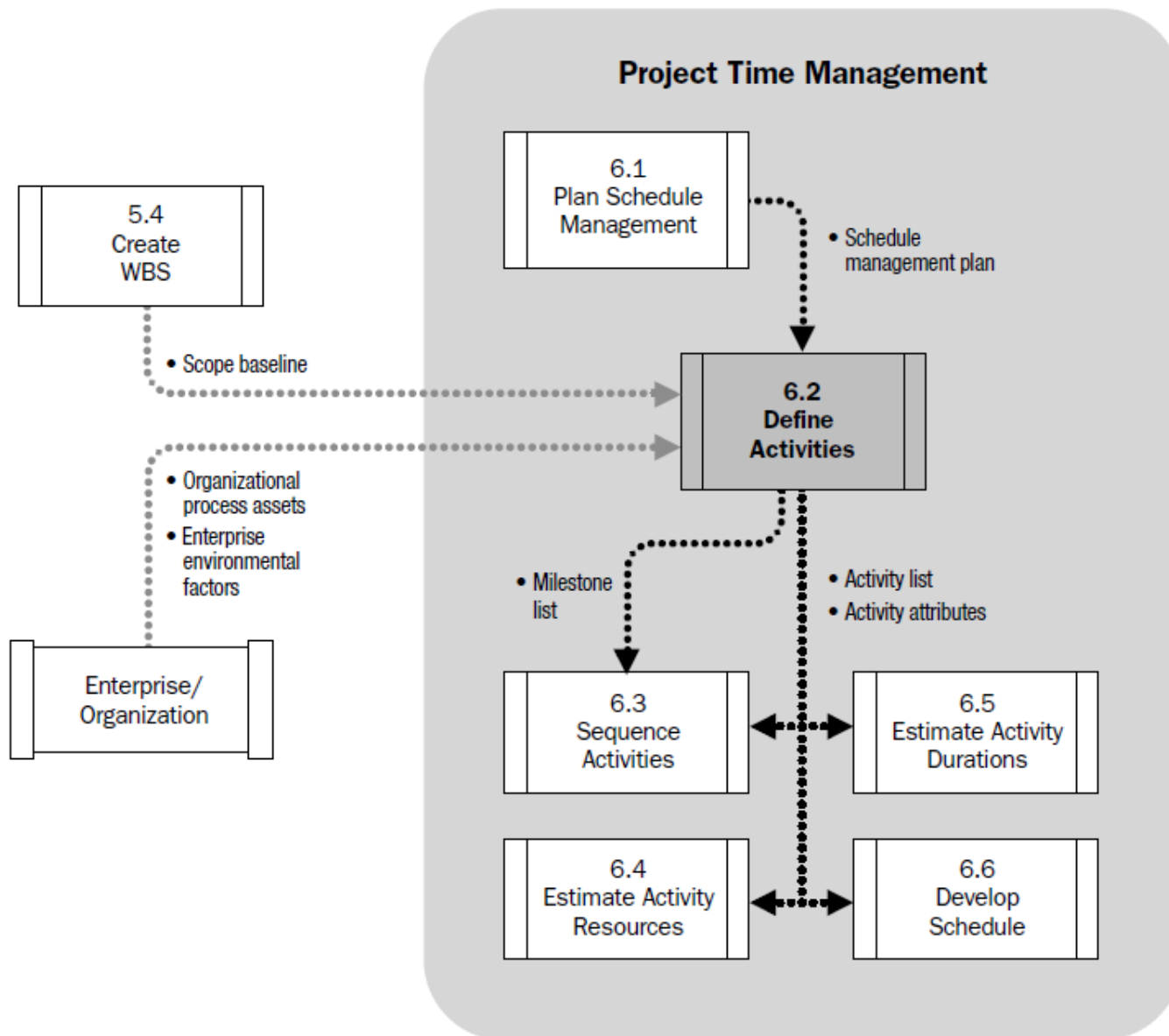
Project Time Management

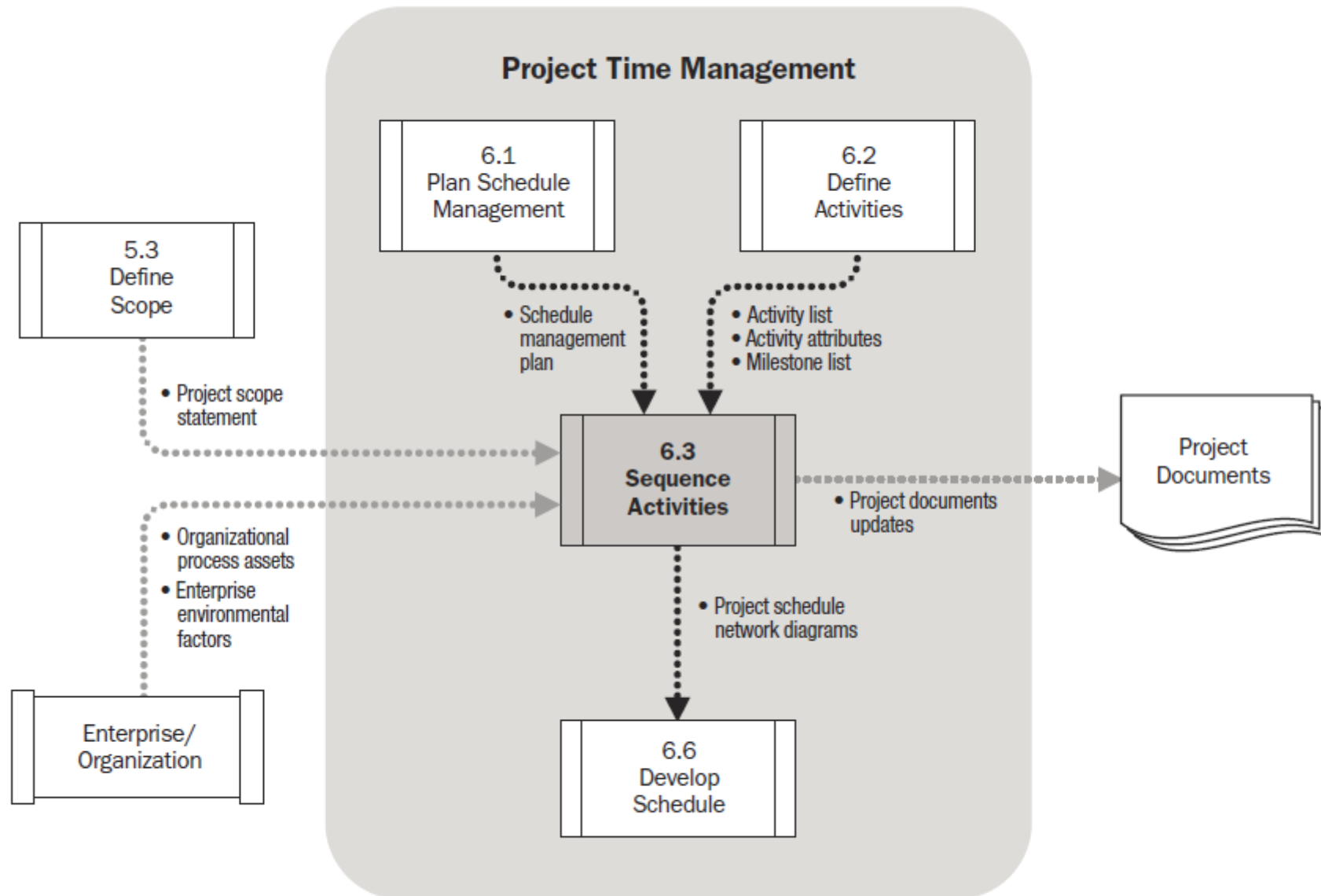
6.1 Plan Schedule Management

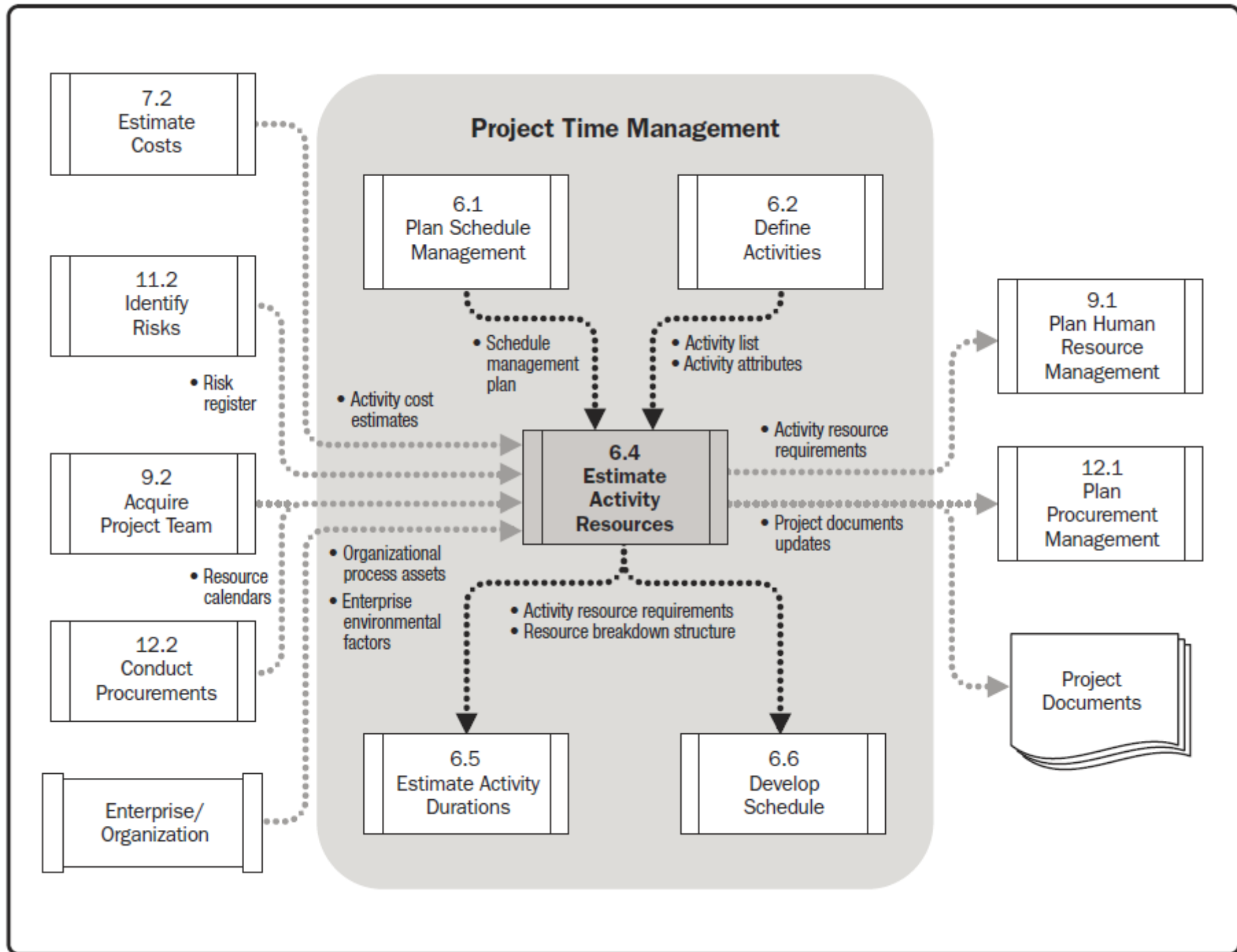
- Enterprise
environmental
factors
- Organizational
process assets

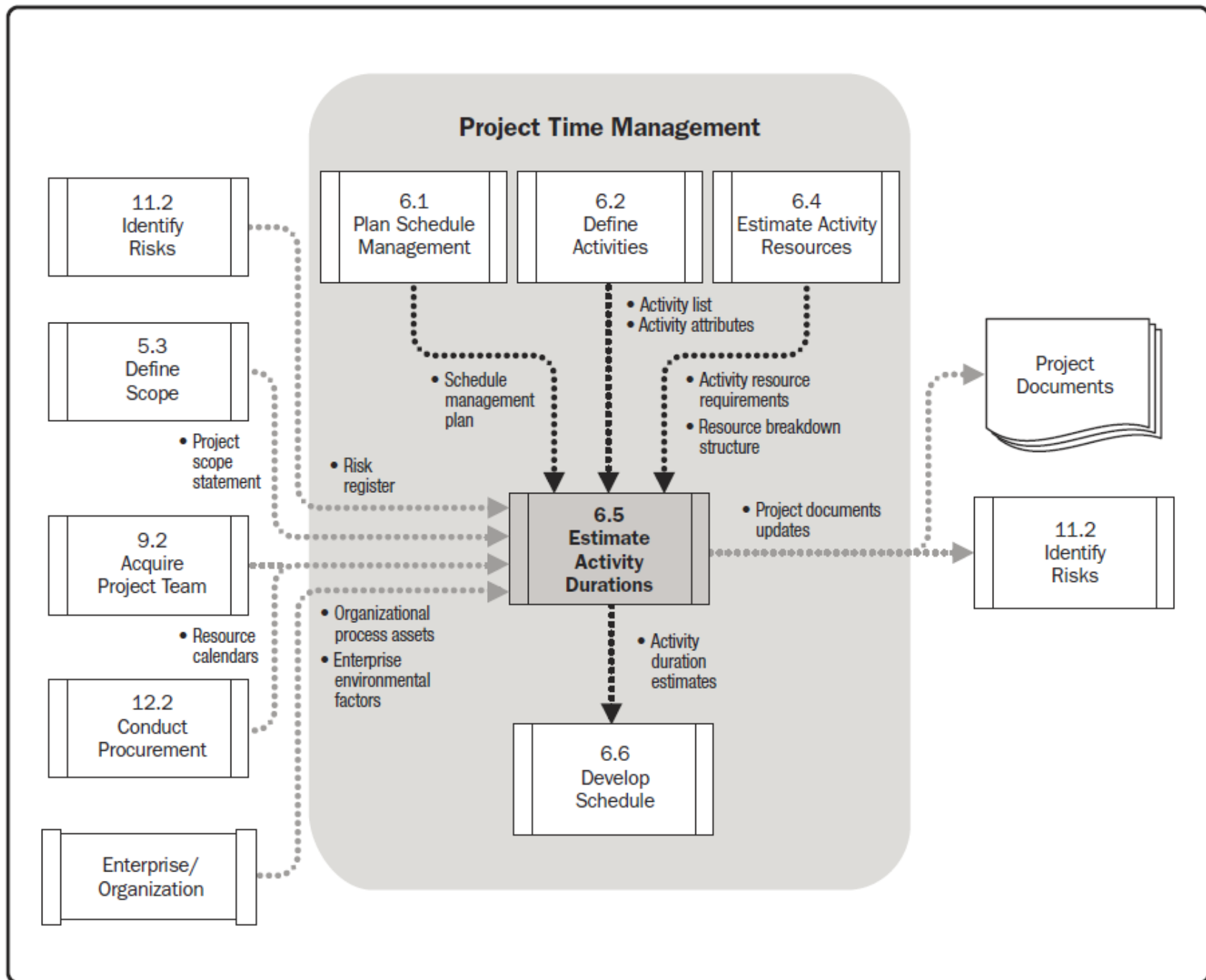
• Schedule
management
plan

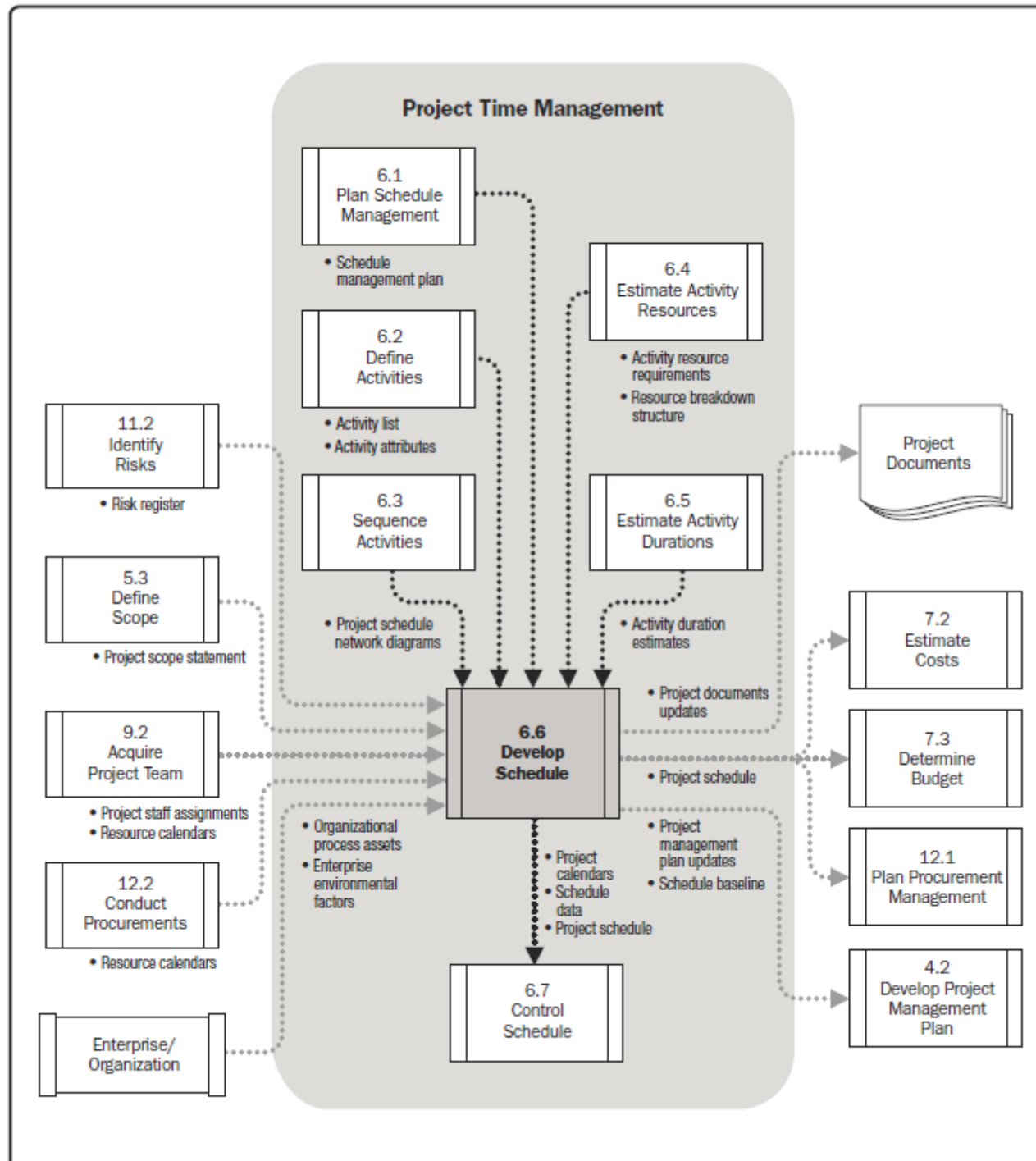


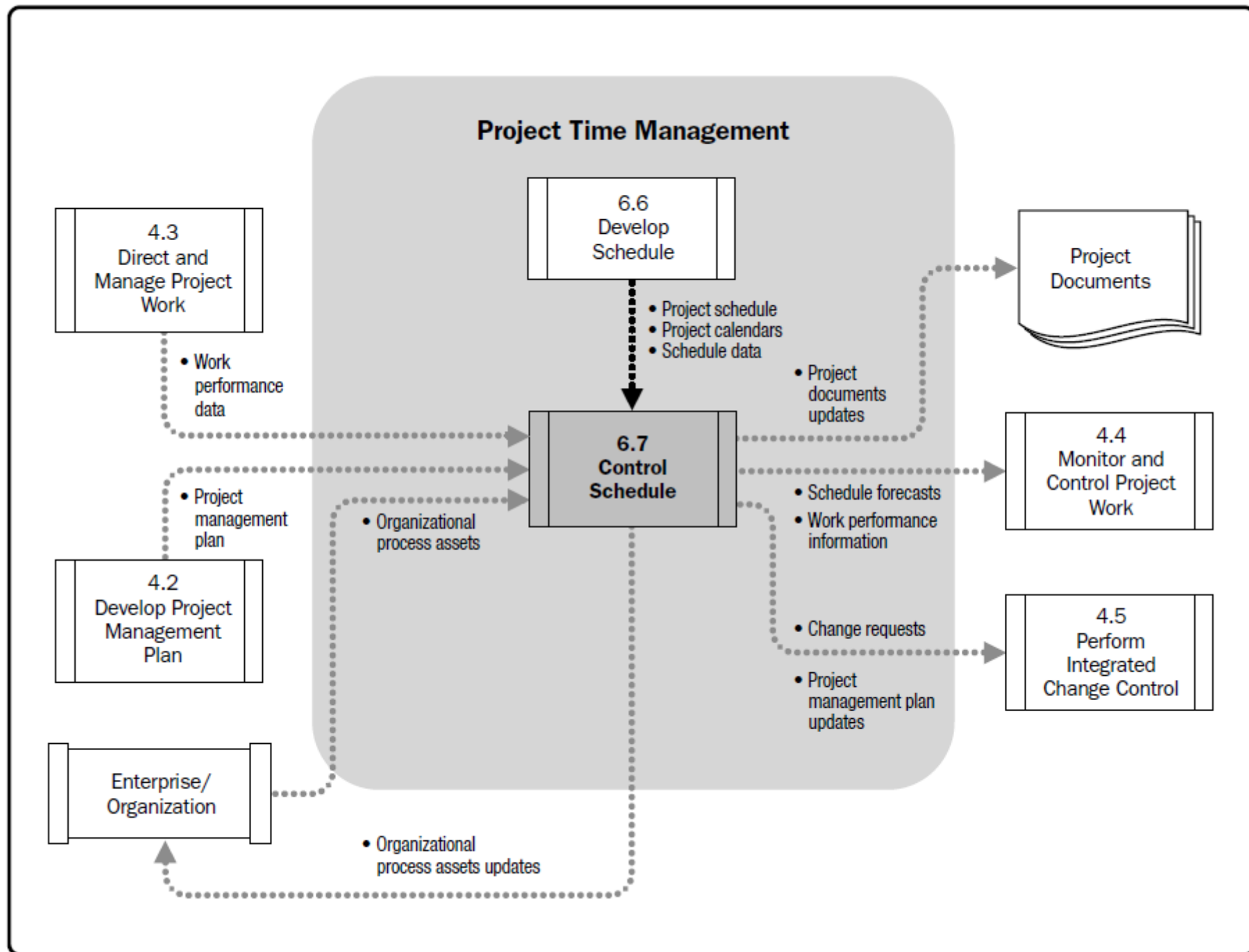






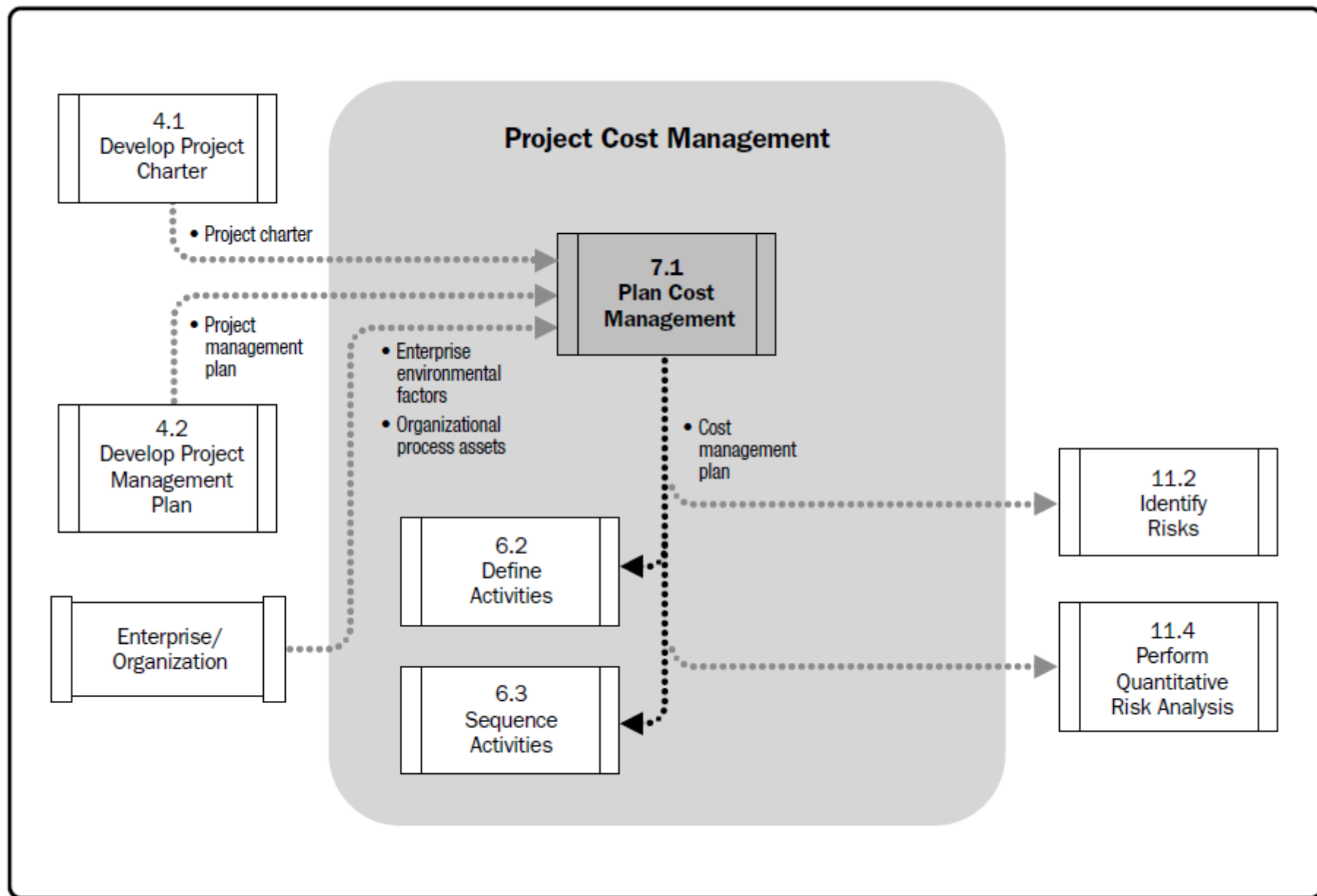






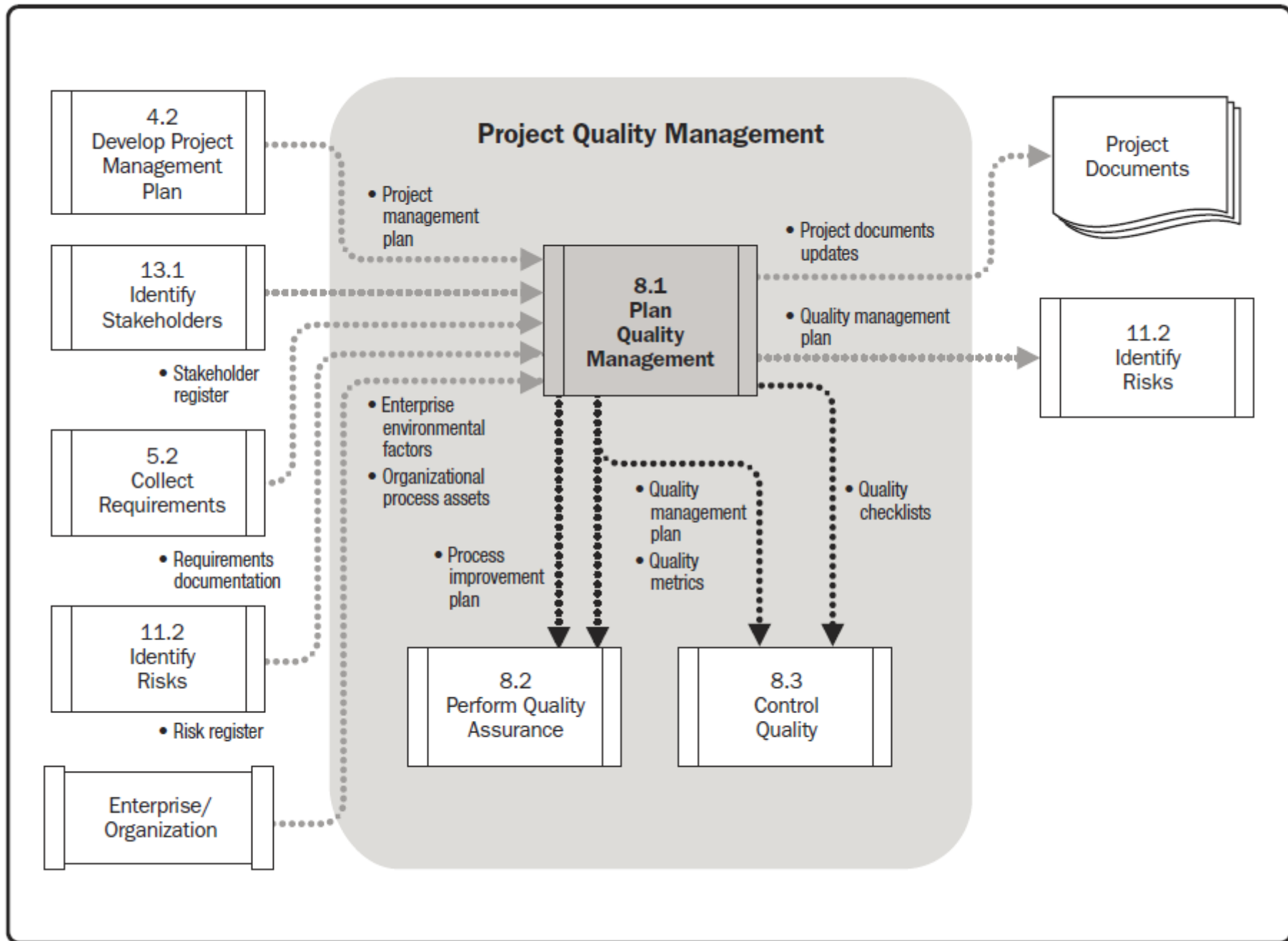
Project Cost Management

- 7.1 Plan Cost Management**—The process that establishes the policies, procedures, and documentation for planning, managing, expending, and controlling project costs.
- 7.2 Estimate Costs**—The process of developing an approximation of the monetary resources needed to complete project activities.
- 7.3 Determine Budget**—The process of aggregating the estimated costs of individual activities or work packages to establish an authorized cost baseline.
- 7.4 Control Costs**—The process of monitoring the status of the project to update the project costs and managing changes to the cost baseline.



Project Quality Management

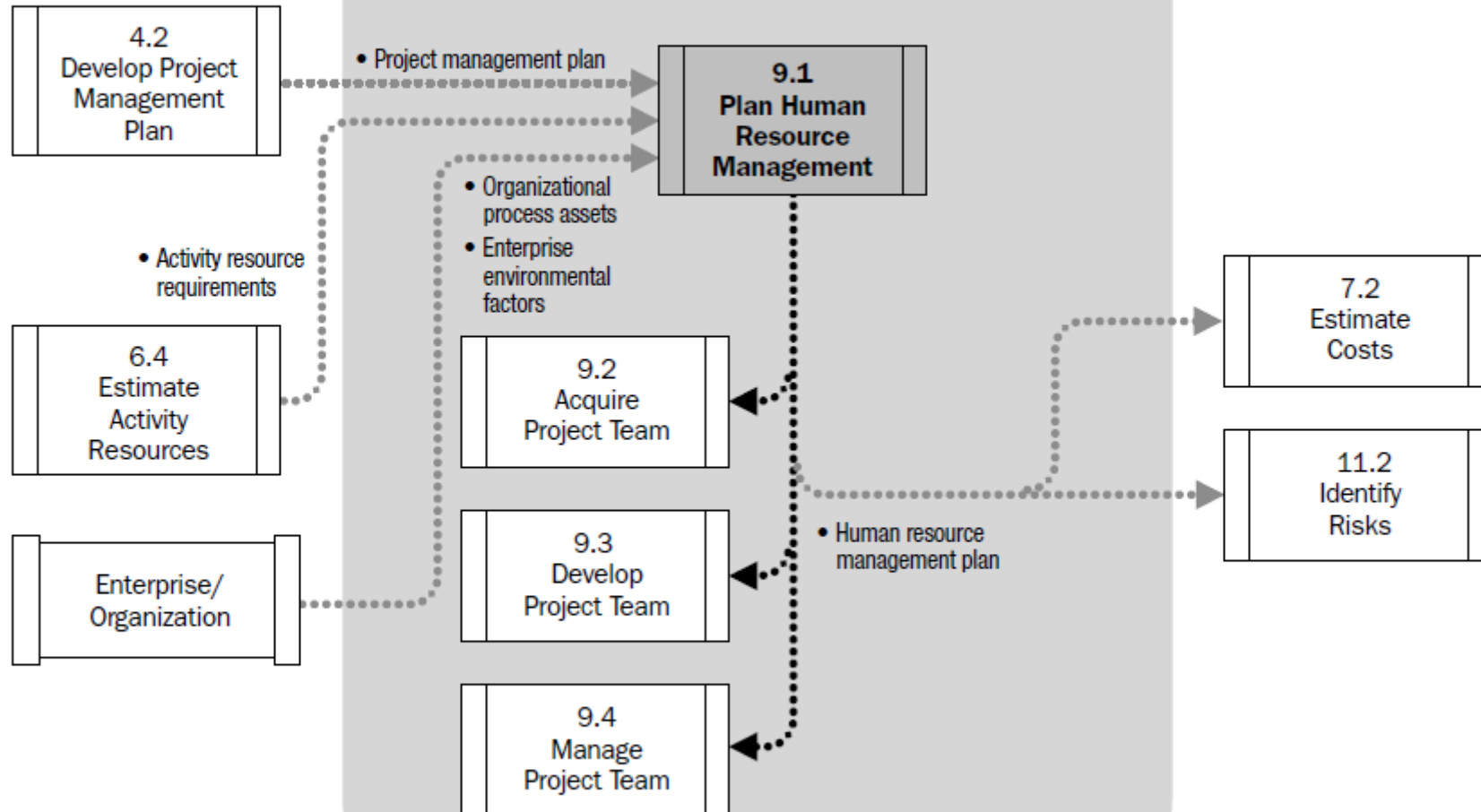
- 8.1 Plan Quality Management**—The process of identifying quality requirements and/or standards for the project and its deliverables and documenting how the project will demonstrate compliance with quality requirements.
- 8.2 Perform Quality Assurance**—The process of auditing the quality requirements and the results from quality control measurements to ensure that appropriate quality standards and operational definitions are used.
- 8.3 Control Quality**—The process of monitoring and recording results of executing the quality activities to assess performance and recommend necessary changes.



Project Human Resource Management

- 9.1 Plan Human Resource Management**—The process of identifying and documenting project roles, responsibilities, required skills, reporting relationships, and creating a staffing management plan.
- 9.2 Acquire Project Team**—The process of confirming human resource availability and obtaining the team necessary to complete project activities.
- 9.3 Develop Project Team**—The process of improving competencies, team member interaction, and overall team environment to enhance project performance.
- 9.4 Manage Project Team**—The process of tracking team member performance, providing feedback, resolving issues, and managing changes to optimize project performance.

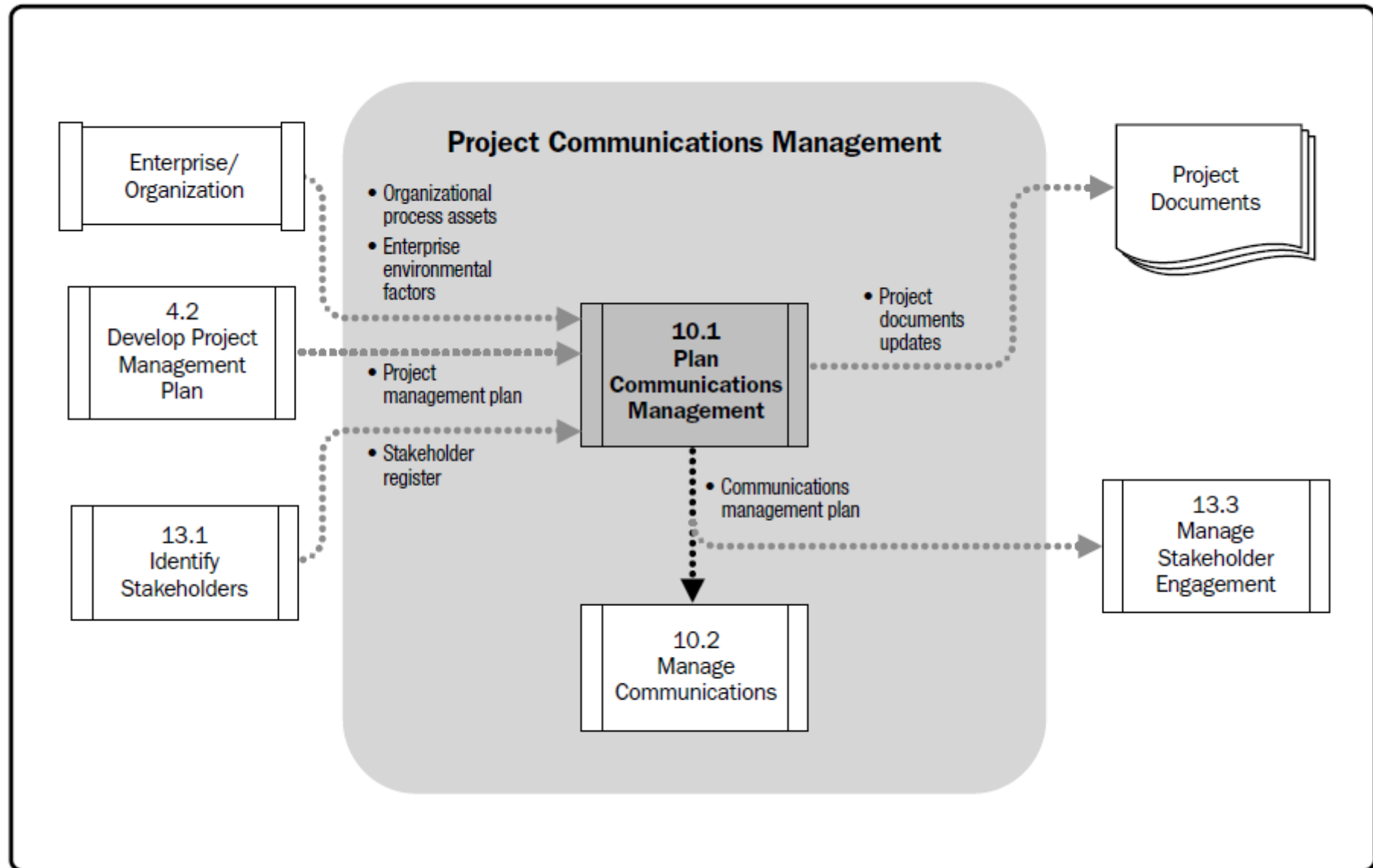
Project Human Resource Management



Project Communications Management

- 10.1 Plan Communications Management**—The process of developing an appropriate approach and plan for project communications based on stakeholder's information needs and requirements, and available organizational assets.
- 10.2 Manage Communications**—The process of creating, collecting, distributing, storing, retrieving and the ultimate disposition of project information in accordance with the communications management plan.
- 10.3 Control Communications**—The process of monitoring and controlling communications throughout the entire project life cycle to ensure the information needs of the project stakeholders are met.

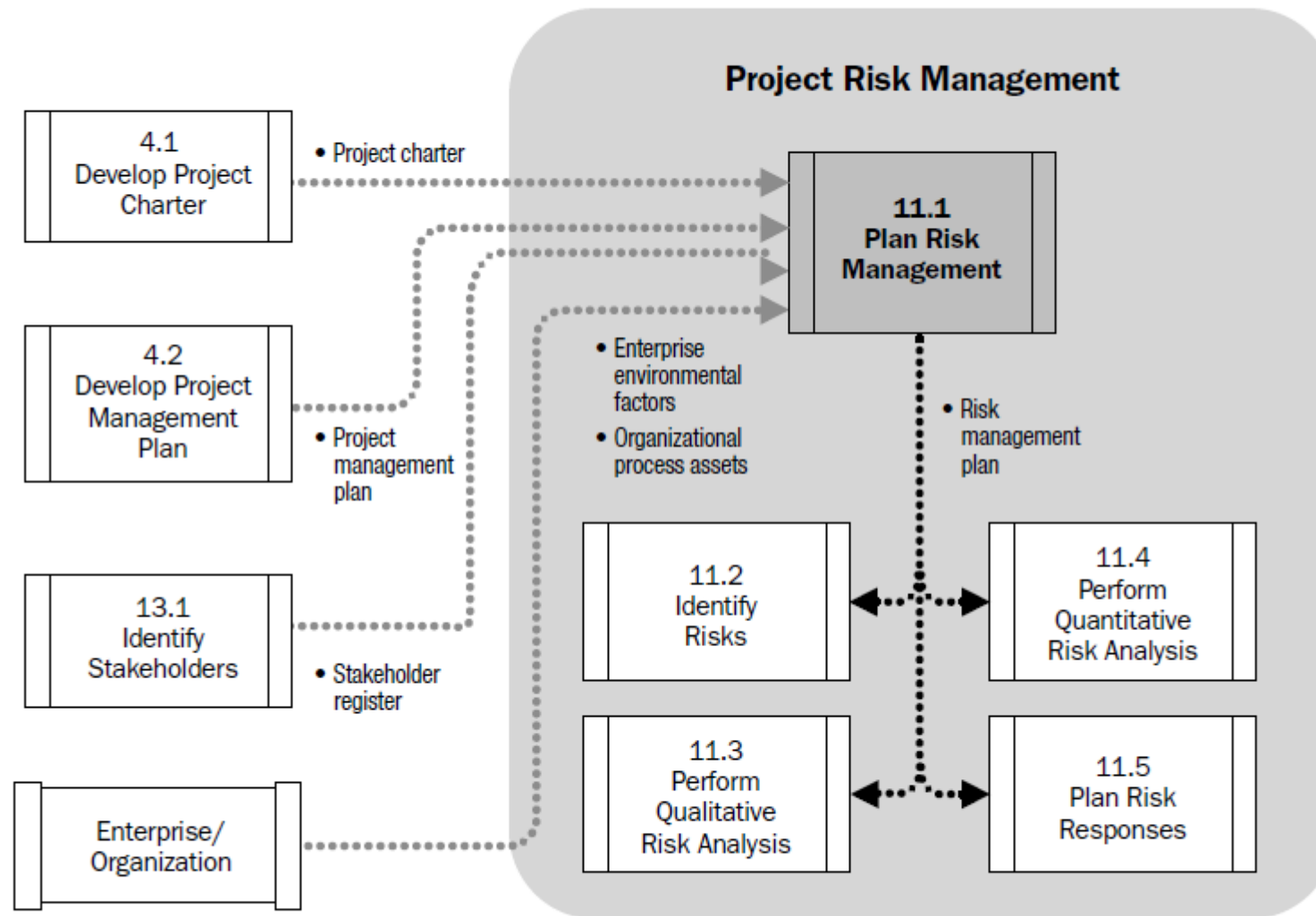
Project Communications Management



Project Risk Management

- 11.1 Plan Risk Management**—The process of defining how to conduct risk management activities for a project.
- 11.2 Identify Risks**—The process of determining which risks may affect the project and documenting their characteristics.
- 11.3 Perform Qualitative Risk Analysis**—The process of prioritizing risks for further analysis or action by assessing and combining their probability of occurrence and impact.
- 11.4 Perform Quantitative Risk Analysis**—The process of numerically analyzing the effect of identified risks on overall project objectives.
- 11.5 Plan Risk Responses**—The process of developing options and actions to enhance opportunities and to reduce threats to project objectives.
- 11.6 Control Risks**—The process of implementing risk response plans, tracking identified risks, monitoring residual risks, identifying new risks, and evaluating risk process effectiveness throughout the project.

Project Risk Management



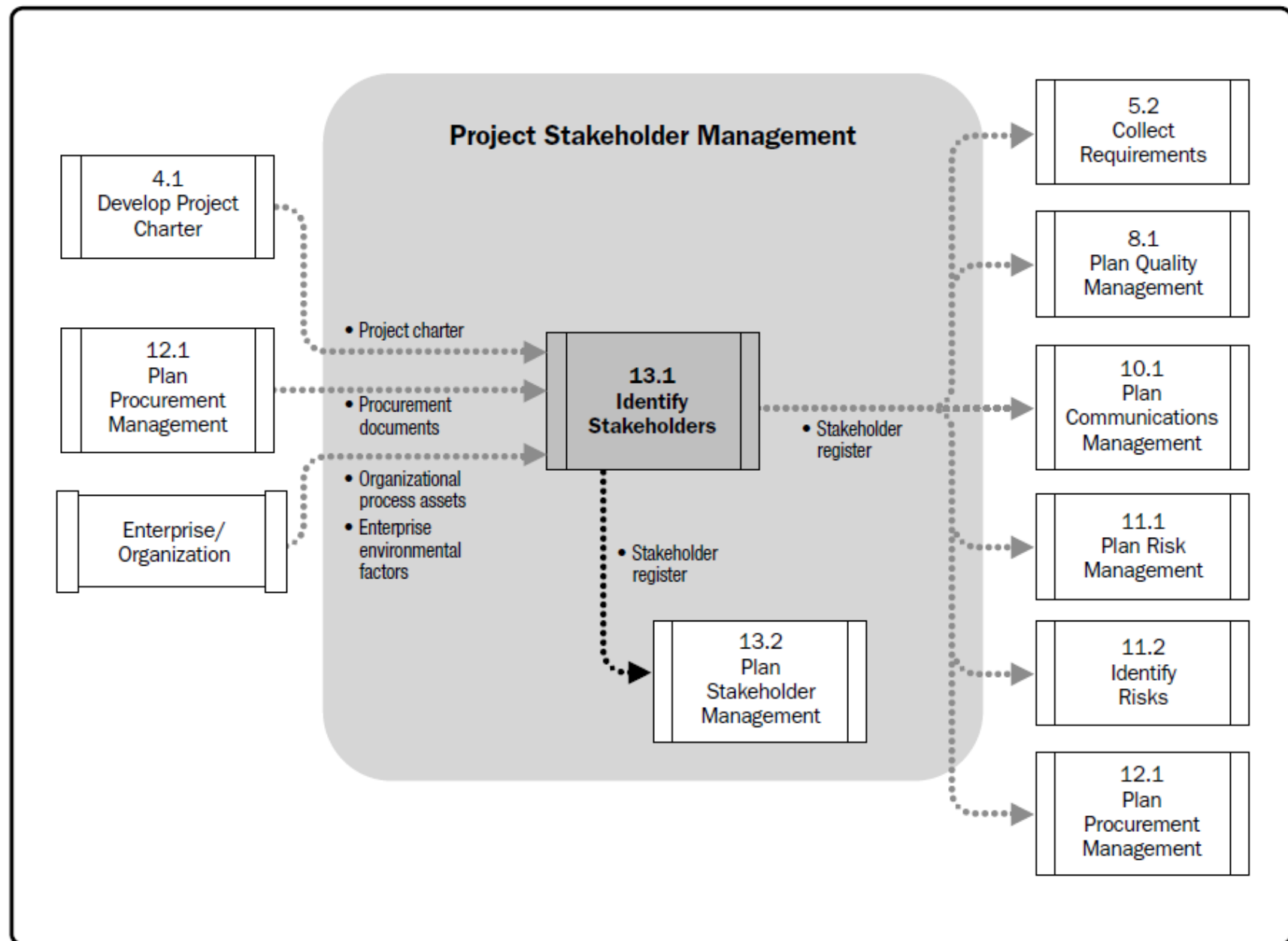
Project Procurement Management

- 12.1 Plan Procurement Management**—The process of documenting project procurement decisions, specifying the approach, and identifying potential sellers.
- 12.2 Conduct Procurements**—The process of obtaining seller responses, selecting a seller, and awarding a contract.
- 12.3 Control Procurements**—The process of managing procurement relationships, monitoring contract performance, and making changes and corrections as appropriate.
- 12.4 Close Procurements**—The process of completing each project procurement.

Project Stakeholder Management

- 13.1 Identify Stakeholders**—The process of identifying the people, groups, or organizations that could impact or be impacted by a decision, activity, or outcome of the project; and analyzing and documenting relevant information regarding their interests, involvement, interdependencies, influence, and potential impact on project success.
- 13.2 Plan Stakeholder Management**—The process of developing appropriate management strategies to effectively engage stakeholders throughout the project life cycle, based on the analysis of their needs, interests, and potential impact on project success.
- 13.3 Manage Stakeholder Engagement**—The process of communicating and working with stakeholders to meet their needs/expectations, address issues as they occur, and foster appropriate stakeholder engagement in project activities throughout the project life cycle.
- 13.4 Control Stakeholder Engagement**—The process of monitoring overall project stakeholder relationships and adjusting strategies and plans for engaging stakeholders.

Project Stakeholder Management



Project Scope

Project Scope

"The work that needs to be accomplished to deliver a product, service, or result with the specified features and functions." [PMBOK]

Project Scope

Scope creep is a term which refers to the incremental expansion of the scope of a project, which may include and introduce more requirements that may not have been a part of the initial planning of the project.

Scope creep has an impact on time and budget.

Project Scope

There are two distinct ways to separate **scope creep management**.

The first is **business scope creep**, and the second is called **features (also technology) scope creep**.

The type of scope creep management is always dependent on the people who create the changes.

Project Stakeholders

Project stakeholders are individuals and organizations that are actively involved in the project, or whose interests may be affected as a result of project execution or project completion.

They may also exert influence over the project's objectives and outcomes.

The project management team must identify the stakeholders, determine their requirements and expectations, and, to the extent possible, manage their influence in relation to the requirements to ensure a successful project.

Project Stakeholders

The following are examples of project stakeholders:

- Project leader
- Project team members
- Upper management
- Project customer
- Resource Managers
- Line Managers
- Product user group
- Project testers
- Any group impacted by the project as it progresses
- Any group impacted by the project when it is completed
- Subcontractors to the project
- Consultants to the project